CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF PESTICIDE REGULATION
MEDICAL TOXICOLOGY BRANCH

SUMMARY OF TOXICOLOGY DATA
BUTOXYPOLYPROPYLENE GLYCOL
(Stabilene®)

Chemical Code # 000170, Tolerance # 50245
SB 950 # 026
Original date: February 5, 2002

I. DATA GAP STATUS

Chronic toxicity, rat: (Subchronic, dermal)	Data Gap, inadequate study on file, no adverse effect indicated Acceptable study on file
Chronic toxicity, dog:	Data Gap, inadequate study on file, no adverse effect indicated
Oncogenicity, rat:	Data Gap, no study on file.
Oncogenicity, mouse:	Data gap, no study on file
Reproduction, rat:	Data gap, no study on file.
Teratology, rat:	Data Gap, no study on file.
Teratology, rabbit:	Data Gap, no study on file.
Gene mutation:	No data gap, possible adverse effect.
Chromosome effects:	No data gap, possible adverse effect
DNA damage:	No data gap, no adverse effect.
Neurotoxicity:	Not required at this time.

Toxicology one-liners are attached.

All record numbers through 114733 in 50245 - 007 were examined.
** indicates an acceptable study.

File name: T020205
Original: J. Kishiyama and Gee, February 5, 2002

II. TOXICOLOGY ONE-LINERS AND CONCLUSIONS

These pages contain summaries only. Individual worksheets may contain additional effects.

CHRONIC TOXICITY, RAT

50245 - 003 010051 Carpenter, C. P., C. S. Weil, P. E. Palm, M. D. Woodside and H. F. Smyth, Jr. "The toxicology of butoxypolypropylene glycol 800 (Crag Fly Repellent)." (Mellon Institute, published in *Agricultural and Food Chemistry* 7 (11): 763-769 (1959)) Carworth-Wistar rats (20/sex/dose) were fed diets containing 0, 0.004, 0.016, 0.064 or 0.256% Crag Fly Repellant (BPG 800, sp. gravity 0.990) for 2 years. Four males and 4 females from the control, 0.004 and 0.016% groups were sacrificed at 365 days. Body weights and food consumption were recorded periodically. Selected tissues, including liver, heart, spleen, kidney, lung, stomach, colon, pancreas, urinary bladder, testes and ovaries and adrenal gland, were examined microscopically at 6 months, 1 and 2 years. A number of animals died from infections. Hematocrits were determined at 90, 180, 270, 360, 540 and 730 days for the controls and 2 highest dose groups with no effects found. Body weights in females at 0.256% of the diet were lower than other groups while males were comparable. Transitory cloudy swelling of the kidney convoluted tubules were seen at 6 months at 0.064 and 0.256% but not later. Apparent NOEL 0.064% (640 ppm) BPG 800 in the diet of rats (body weight). Poor copy of the publication. UNACCEPTABLE (insufficient information including limited histopathology, no individual data, inadequate hematology, no clinical chemistry, urinalysis, or ophthalmology). No adverse effect as reported. Not upgradeable. (Gee, 3/5/85 and 2/5/02)

Subchronic:

** 50245 - 007 114733 Wagner, C. L., K. A. Loughran and M. W. Gill. "Stabilene® Fly Repellent: Ninety-Day Repeated Cutaneous Dose Toxicity Study in Fischer 344 Rats". (Bushy Run Research Center, Laboratory project ID 54-96, January 2, 1992.) Stabilene® Fly Repellent (lot S-114336, PC-82705, > 99%) was applied undiluted to the skin (6 hours/day [M-F] occluded for 12-13 weeks - 65 doses) at volumes of 0 (Milli-Q filtered water, 2.0 ml/kg), 0.5, 1.0, or 4.0 ml/kg body weight/day (equivalent to 494.5, 989 or 3956 mg/kg body weight) to 15 Fischer 344 rats/sex/group. Ten/sex additional animals in the control and high dose groups were held for a 6-week recovery period. A volume of 4 ml/kg was the highest practical for application to the back of rats. Clinical observation was unkempt body appearance for all animals (both sexes) in the high dose group. A few animals in mid and high dose groups showed exfoliation (scaling) and excoriation (cracking) of the treated skin area, primarily in males. Food consumption was reduced during the first week of dosing for the high dose group. Body weight was 8-11% and 3-6% lower for high dose males and females, respectively. Erythrocyte count, hemoglobin, and hematocrit were slightly increased with associated decreases in MCHC, MCH and MCV, which were considered as probably treatment related for high dose females. There were no consistent treatment-related histological findings. Systemic NOEL = 989 mg/kg (body weight); dermal NOEL = 494.4 mg/kg (skin exfoliation/excoriation). ACCEPTABLE with no adverse effects. (Kishiyama and Gee, 2/4/02).

CHRONIC TOXICITY, DOG

50245 - 003 010051 Carpenter, C. P., C. S. Weil, P. E. Palm, M. D. Woodside and H. F. Smyth, Jr. "The toxicology of butoxypolypropylene glycol 800 (Crag Fly Repellent)." (Mellon Institute, published in *Agricultural and Food Chemistry* 7 (11): 763-769 (1959)) Dogs, Cocker, basenji or 3/4 basenji hybrids, 2 - 3 years of age, were given BPG 800 in corn oil in capsules at 0.0128, 0.0032 or 0.0008 g/kg 5 days/week for 1 year. Number/sex per group was not given. Limited hematology and clinical chemistry parameters were measured. No toxicological effects were found at any dose for hematology, clinical chemistry, or histopathology (limited tissues). NOEL not established but > 0.0128 g/kg (12.8 mg/kg) for 1 year. UNACCEPTABLE (insufficient information, inadequate dose levels) Not upgradeable. No adverse effect as reported. (Gee, 3/5/85 and 2/5/02).

ONCOGENICITY, RAT

no study on file

ONCOGENICITY, MOUSE

no study on file

REPRODUCTION, RAT

no study on file

TERATOLOGY, RAT

no study on file

TERATOLOGY, RABBIT

no study on file

GENE MUTATION

**** 50245 - 007 114730** Vergnes, J. S., E. R. Morabit. "Stabilene® Fly Repellent: Determination of Mutagenic Potential in the *Salmonella*/Microsome (Ames) Assay." (Bushy Run Research Center, Laboratory project ID 53-153, March 21, 1991.) Stabilene® Fly Repellent (lot s-114336 PC82705, > 99% a.i.) was tested at concentrations of 0.10 to 10 mg/plate with and without metabolic activation for potential mutagenicity with *Salmonella* strains TA98, TA100, TA1535, TA1537 and TA1538. There were two trials with triplicate plates per concentration per trial. The positive controls were functional. A possible adverse effect was noted by a two-fold increase in revertant colonies strain TA1537 without activation only. This was confirmed in the repeat test. The authors suggested the evidence for mutagenicity of Stabilene® was weak. The mean colony counts for TA1537 in the two trials were 10 and 11 at 3 mg/plate versus 5 in each of the solvent (DMSO) controls. No other strain gave any indication of a mutagenic effect. ACCEPTABLE. (Kishiyama and Gee, 2/1/02).

CHROMOSOME EFFECTS

** **50245 - 007 114731** Vergnes, J. S., E. R. Morabit. "Stabilene® Fly Repellent: Determination of Chemical Effects upon Sister Chromatid Exchanges in Cultured Chinese Hamster Ovary Cells." (Bushy Run Research Center, Laboratory project ID 53-163, March 12, 1991.) Stabilene® Fly Repellent (lot s-114336 PC82705, > 99%) was tested at concentrations of 0 (DMSO), 0.2, 0.4, or 0.8 mg/ml with rat liver metabolic activation and 0, 0.01, 0.02 and 0.04 mg/ml without activation for potential genotoxicity with Chinese hamster ovary cells. There was a single trial with and without activation, conducted at different times. Duplicate cultures per concentration per trial with 25 cells scored per culture. Stabilene® at 0.01, 0.02 and 0.04 mg/ml without S9 Mix gave statistically significant increases in the number of SEC/chromosome without a concentration dependence. The authors considered the increase in the number of SCEs as not biologically significant, since the increases were not dose related and of small magnitude. The concentration range, however, was narrow and a minimum number of metaphases were scored, possibly limiting the interpretation of the results. ACCEPTABLE with equivocal evidence for genotoxicity. (Kishiyama and Gee, 2/4/02)

DNA DAMAGE

** 50245 - 007 114732 Vergnes, J. S. and E. R. Morabit. "Stabilene® Fly Repellent: Determination of *In Vivo* Clastogenic Potential Using the Micronucleus Test with Swiss-Webster Mice." (Bushy Run Research Center, Laboratory project ID 54-4, March 12, 1991.) Stabilene® Fly Repellent (lot s-114336, >99%) was administered at doses of 0, 500, 800 or 1000 mg/kg as a single i.p. injection to 5 Swiss-Webster mice/sex/group or 8/sex/group at the high dose. These doses were selected based on a LD50 study where 3/10 died at 1250 mg/kg. One male died at 1000 mg/kg. Unkempt appearance was reported for males at 800 and 1000 mg/kg. Peripheral blood samples were collected at 30, 48 and 72 hours post- dosing. A minimum of 1000 PCEs were scored per animal and PCE/NCE determined. Triethylenemelamine was the positive control at 30 hours and was functional. There were no significant increases in the incidence of micronucleated polychromatic erythrocytes in the peripheral blood of Swiss-Webster mice with Stabilene® treatment at 500, 800 or 1000 mg/kg. The PCE/NCE ratios were comparable. ACCEPTABLE with no adverse effect noted in the study as conducted. (Kishiyama and Gee, 2/4/02) no study on file

NEUROTOXICITY

Not required at this time.